NASA Procedural Requirements

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COMPLIANCE IS MANDATORY

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Subject: NASA Environmental Management System

Responsible Office: Environmental Management Division

Appendix D: Guidance on the Development, Implementation, and Maintenance of the EMS

D.1 General Requirements

a. The EMS establishes an organizational structure to minimize environmental risks that could impede meeting mission objectives.

b. It encourages the efficient use of resources, freeing operations and maintenance funds.

D.2 Environmental Policy

a. The Center's own environmental policy should be signed by the Center Director.

b. The external communication of the policy can easily be accomplished by posting the policy on the Center's Web site. In addition, a paper copy of the environmental policy should be available upon request.

D.3 Environmental Aspects

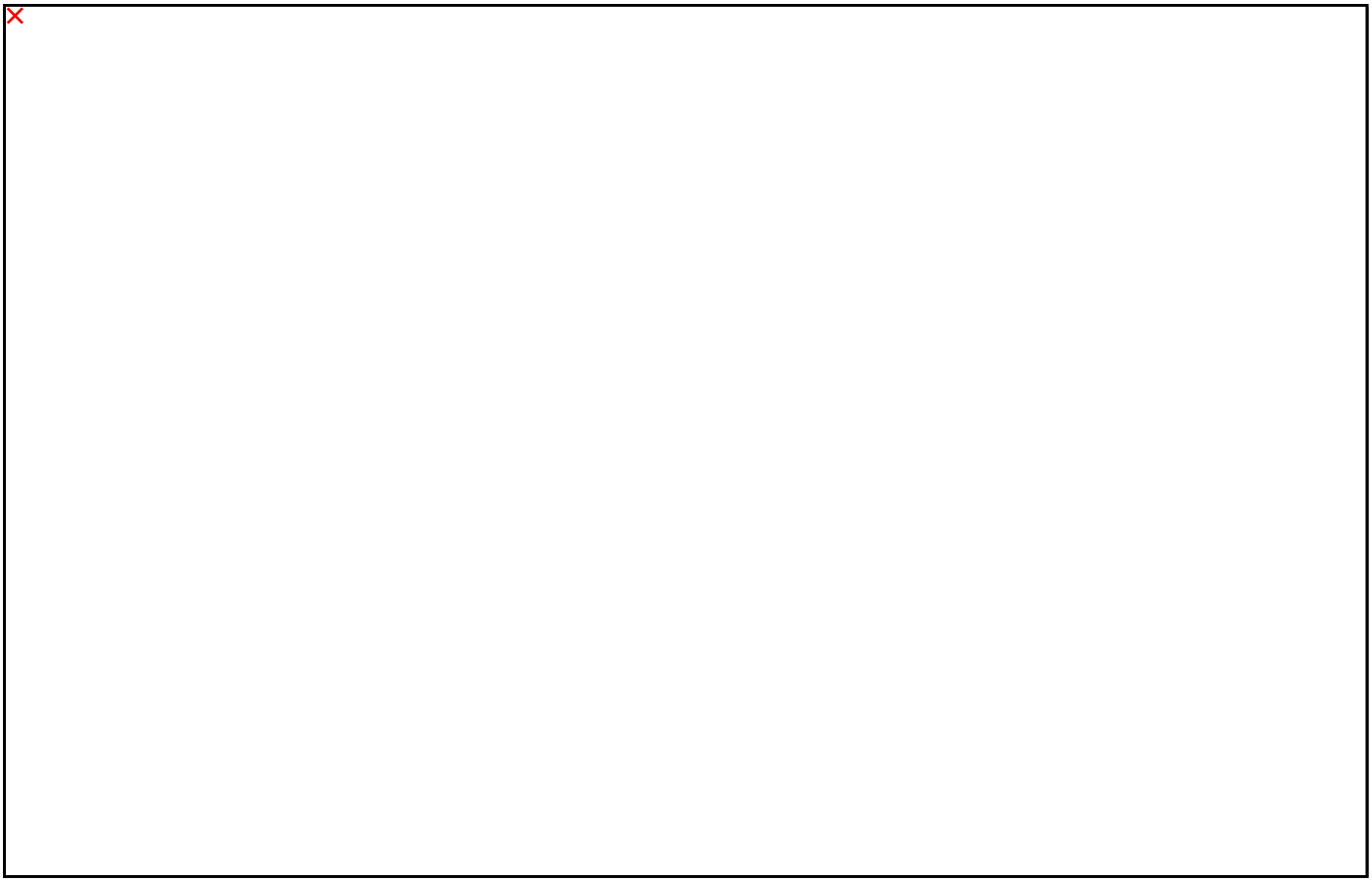
a. The annual updating of the environmental aspects provides an opportunity to keep the core implementation team engaged in the EMS process.

b. For those independent contractors that do not come under EO 13423, the requiring office may coordinate with their procurement and environmental officials to include appropriate language supporting the NASA Center EMS in the resulting contract.

c. Major changes in the mission or facilities should be managed within the EMS. For large projects, the National Environmental Policy Act (NEPA) can be utilized to evaluate the environmental impact of the changes. A determination should be made whether a change in the environmental aspects is warranted as well as other changes in the EMS. For smaller projects, a simple review of the change may be adequate to determine its impact on environmental aspects and the EMS.

d. The table on the next page provides examples of how environmental aspect categories might be ranked within the risk matrix. Both beneficial and adverse environmental impacts have been evaluated. Assumptions have been made with regard to the magnitude of the environmental aspect/aspect category. Each Center will need to determine the individual ranking for each environmental aspect/aspect category at its location.

Table D-1: Example of an Environmental Aspect Risk Analysis Table



D.4 Legal and Other Requirements

a. The Centers should pay particular attention to the other requirements to which they subscribe. These can be voluntary or mandatory, based on their origin. These do not include documents developed from within the Center, but they should include all pertinent documents from NASA HQ and other organizations outside of the Center.

b. Each legal and other requirement should be linked to at least one environmental aspect or an element of the EMS.

c. The listing of the legal and other requirements should also include a short description of the requirement and/or its purpose.

D.5 Objectives, Targets, and Programs

a. Objectives and targets may be established to address any medium- or low-priority environmental aspect that a Center determines is necessary to manage or maintain to ensure that the environmental aspect does not become a high priority.

b. The objectives and targets should be aligned with the Center's mission.

c. Objectives and targets should be established for all applicable goals in EO 13423, Strengthening Federal Environmental, Energy, and Transportation Management, even if they are not identified as high-priority aspects.

d. High-priority aspects and their accompanying objectives and targets need to be addressed regardless of the organization having responsibility for their management. If necessary, the EMS Representative should elicit the support of Center management to ensure that this is accomplished.

e. The determination of whether a high-priority aspect and associated objective and target should be managed within the EMS depends on whether it is within the scope of the EMS. If it is within the scope, then it should be considered, even if it includes aspects that are part of a NASA program spread across numerous locations.

f. If there are ongoing compliance issues at the Center, objectives and targets to correct the situation are appropriate. It may also be appropriate to consider past compliance issues for objectives and targets to ensure that they do not reappear.

g. The Center should ensure that the number of objectives and targets can be capably managed by the organization. Particular attention should be given to the number of objectives and targets assigned to one organization.

h. For an objective and target spread across the entire Center, it can be beneficial to establish an EMS cross-functional team to manage the objective, target, and program rather than depend on one organization to generate and implement the EMPs. The team should be provided with training on how to function as a team and solve basic problems using the simple quality tools.

i. When establishing objectives, targets, and metrics, consider creating relative measures for those objectives and targets that are affected by changes in the Center's activity levels such as launches or number of employees and contractors onsite.

j. The status of the objectives, targets, and programs should be reported to Center management on a routine basis, e.g., quarterly.

k. With the ownership of the objectives, targets, programs, and associated metrics assigned to various members of the EMS cross-functional team, routine updates provide an opportunity to engage the team in the process on a frequent basis.

D.6 Resources, Roles, Responsibilities, and Authority

a. Resources required for the EMS should include human resources, organizational infrastructure, technology, and financial resources.

b. Resources are required not only in the development and implementation of the EMS but, just as importantly, in the ongoing maintenance of the EMS. Given that resources are often limited, it is effective to spread the resource requirements to many organizations and personnel and, thereby, use the EMS Representative to coordinate those resources. The resource requirements should be spread to all levels within the organization, since often those personnel lower in the organization have more time and interest in taking on the EMS responsibilities.

c. Center managers need to demonstrate support for the EMS in order for the effort to be successful. They should be engaged in the process and fully aware of progress and process status. Frequent updates on progress during development and implementation can be very beneficial. Management should show their support through such means as e-mails, letters, and meetings. Once the EMS is established, managers should be briefed on performance measures on a routine basis, e.g., quarterly, so that they can see the improvements that are being made and provide guidance on areas needing further improvement.

d. Both civil service employees and contractors, to the extent specified or referenced in the appropriate contract, need to be engaged in the EMS. This can be accomplished initially by forming an active EMS cross-functional team. The team should help develop every element in the EMS, even if it means just reviewing and providing feedback on what already exists or is being developed by others. The team becomes the conduit into all of the Center's organizations and keeps their organizations and its management appraised of progress. Once the EMS is implemented, the team assists in the ongoing maintenance and improvement of the EMS.

e. Forming teams to address the various objectives, targets, and programs within the EMS can expand the involvement of employees and contractors in the process and engage more personnel in the EMS. This also takes the workload off of a limited management resource pool. Once these teams have been established, it is beneficial to replace team members over time to keep new ideas flowing into the system.

f. All Center personnel should understand their roles, responsibilities, and authority for the EMS. It can be helpful to develop the roles, responsibilities, and authority for each directorate, organization, or office. Start with a list of general roles, responsibilities, and authority based on the high-priority aspects and what the employees and contractors can do to minimize that impact. Then develop specific roles, responsibilities, and authority based on what is unique to that directorate, organization, or office.

g. The EMS requires the designation of an EMS Representative. This person can come from any level but must be capable of performing the tasks specified in the requirements section of this NPR, as set out in Section 4.1, Resources, Roles, Responsibility, and Authority. That capability is based on a thorough understanding of the EMS, to include its development, implementation, and maintenance. The EMS Representative must also be in a position to advise Center management on the status of the EMS and make recommendations on its improvement.

h. It can be beneficial to integrate the EMS and the environmental program once the EMS has been established. The entire environmental program can benefit from the tools that reside within the EMS. It can even be beneficial to integrate the EMS with other management systems at the Center such as the Quality Management System or OSHA's Voluntary Protection Program. There are some parts of these management systems that are very similar and, as such, benefit from integration and a reduction in duplication.

D.7 Competence, Training, and Awareness

a. Awareness training may be accomplished by formal classroom training, on-line training, or as a part of the employee's on-the-job training requirements.

b. The Center should review the contractors' training records to ensure that their employees have received the environmental training that is required of the civil service employees.

D.8 Communication

a. To facilitate communication among NASA, and its stakeholders, and the surrounding communities, to maintain and improve the EMS, Center managers should commit to proactive communications with interested parties. The EMS should support appropriate inclusion of local participation, consistent with the objectives of E.O. 13352, Facilitation of Cooperative Conservation.

b. There are numerous ways to communicate the environmental policy, EMS, and personal environmental responsibility to employees, contractors, and tenants. The key is to develop a communications plan with many of the following methods outlined as steps in that plan:

(1) Intranet Site

(2) Training Programs

(3) Global E-mails

(4) Team Meetings

(5) All Employee Communication Meetings

(6) Badge Extenders

(7) Brochures

(8) Table Tents

(9) Posters

(10) Banners

(11) Bulletin Boards

(12) Newsletters

(13) Environmental Committee

(14) Postings

D.9 Documentation

a. A relatively easy method for documenting the EMS elements is to develop an EMS manual covering all 17 elements of the EMS Standard, ISO 14001:2004, with a description of how the Center implements and maintains each element. By creating hyperlinks to the procedures and records supporting the elements, the amount of text in the EMS manual can be greatly reduced and still provide the clarity essential in this document.

D.10 Control of Documents

a. The Center document management system may provide an excellent, existing system for EMS documents that meets ISO requirements.

D.11 Operational Control

a. Operating criteria are the parameters within which equipment operates in order to prevent or mitigate a significant impact to the environment. Examples include pressure and temperature limits.

b. Operational control devices are instruments and other devices that can warn operators that the process is outside of operating parameters and may cause an impact to the environment. Examples include pressure and temperature gauges, alarms, and similar devices. Often these devices require calibration that must be managed under section 5.1 of this NPR.

c. Contractors, to the extent specified or referenced in the appropriate contract, tenants, and suppliers can play a key role in the success of the Center's EMS. Ideally, the tenants and contractors should be part of the Center's EMS cross-functional team. Even if they were not involved in the initial EMS implementation, they can be provided with training on the EMS and invited to become members of the ongoing EMS cross-functional team.

D.12 Emergency Preparedness and Response

a. Reference documents with emergency preparedness and response requirements include NPR 8715.2, NASA Emergency Preparedness Procedural Requirements.

D.13 Monitoring and Measurement

a. Environmental performance should be reported to Center management on a routine basis, e.g., quarterly. Metrics should be established for all appropriate EO 13423 goals, as well as the high-priority aspects and any ongoing compliance issues.

b. As with the objectives and targets, the number metrics should be limited to a number that can be effectively managed by the Center.

c. The Center's EMS performance measures may need to be reported to NASA HQ. The Interagency EMS metrics will be summarized for all Centers and HQ in FedCenter, the interagency Web site for reporting EMS metrics.

D.14 Evaluation of Compliance

a. Centers should consider combining evaluations of environmental compliance with legal requirements and evaluations of compliance with other requirements. In addition, consideration should be given to combining the environmental compliance evaluation with the evaluation of the EMS.

D.15 Nonconformities, Corrective Action, and Preventive Action

a. Center quality management system procedures may be used to track Corrective and Preventive Action.

D.16 Control of Records

a. The Center's records management system may provide an excellent, existing system for EMS records that meets ISO requirements.

D.17 Internal Audit

a. When conducting the internal audit, an organizational audit approach should be used instead of an element-by-element audit. The organizational audit minimizes the burden on the organization, since no organization should be audited more than once in any cycle. In addition, the organizations develop a better appreciation for how all the elements of the EMS are integrated.

b. Independent audits have been stipulated in these requirements. These audits are characterized by who performs the audit, specifically addressing whether they are performed by auditors independent of the organization. This would include audits by the NASA HQ Environmental Management Division or any other body outside the Center.

c. The Centers should consider the integration of audits to include different management systems, as well as compliance and EMS audits. The advantage of integrated audits is the reduction of resources and costs.

D.18 Management Review

a. The management review provides an opportunity to engage senior managers in the EMS and for them to provide input into the process and demonstrate their commitment to the EMS.

b. For Centers that decide to issue a Declaration of Conformance, the management review serves as a key step in providing the Center Director with the supporting information to assess the status and viability of the EMS in order to issue a Declaration of Conformance.

c. Following is an example of a Declaration of Conformance document:

Example of a Declaration of Conformance

Date: _____

To whom it may concern:

Subject: Environmental Management System (EMS) at (commonly used Center name) Declaration of Conformance

As the Director (insert correct Position/Title if on behalf of a Component Facility) of the (NASA Center), I have determined that (insert appropriate facility name[s] has an environmental management system(s) that is in place and is viable.

Furthermore, I confirm that I, and senior management, have reviewed the environmental management system for conformance with NASA Procedural EMS Requirements and Center EMS requirements.

The determination that the environmental management system(s) is in place and is viable has included consideration of the results of the following assessment(s) (insert as appropriate, the dates of the most recent Headquarters environmental functional review or independent Declaration of Conformance assessment). The audit findings have been recognized by appropriate Center management.

Signature: _____

Name: _____

Title: _____

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